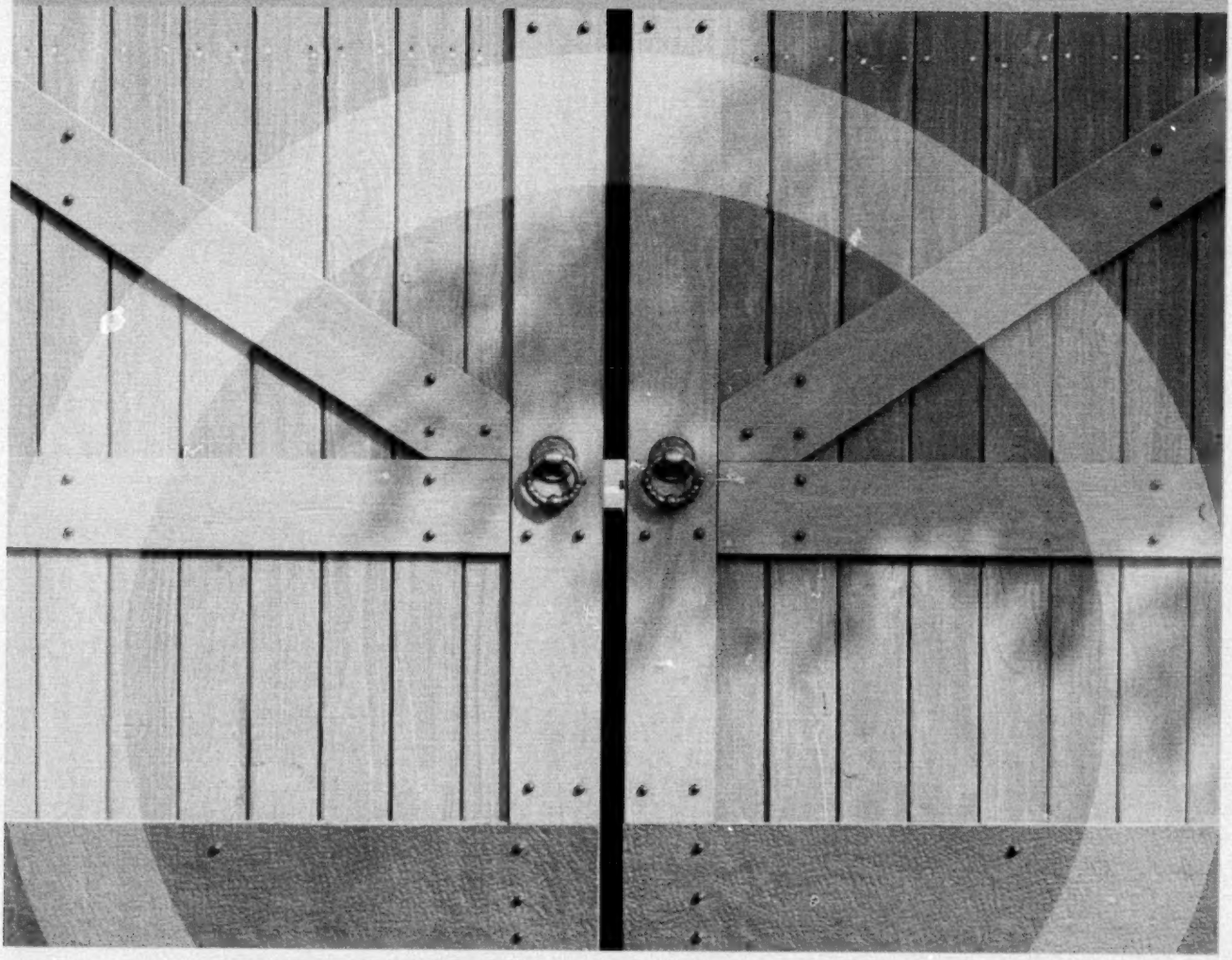
Canadian Food Inspection Agency | Agence canadienne d'inspection des aliments

Animal Biosecurity

National Farm-Level Biosecurity Planning Guide

Proactive Management of Animal Resources



Growing Forward

A federal-provincial-territorial initiative

Canada

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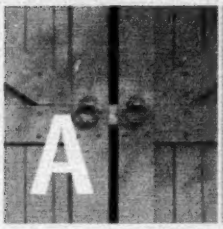


A Background

Biosecurity is a general description for a set of measures designed to protect Canada's animal resources from foreign and established infectious and parasitic disease agents at the national, regional, and farm levels.

Why is animal biosecurity important?

Maintenance of the highest possible animal health status is vitally important to the sustainability and profitability of the Canadian agricultural sector. Future access to premium markets will increasingly depend on our ability to demonstrate freedom from serious animal diseases and pests. Biosecurity standards will play an increasing role in meeting processor requirements, quality assurance programs, and in retaining market access and competitiveness. There is an increasing trend to ensure health certification as an indicator of quality assurance and biosecurity in purchasing and moving live animals. Consumers today are more educated and engaged in welfare and biosecurity expectation in the production of animals, demanding the highest quality of production practices in the agricultural community.

Foreign animal diseases (FADs) and production level diseases – commonly found in parts of Canada – can spread from farm to farm and result in animal sickness, death, and economic loss. The best defence against disease is to implement sound biosecurity practices at the farm level.

An effective biosecurity plan can help:

- improve or maintain animal health, welfare and productivity.
- reduce the risk of the introduction and spread of endemic and foreign diseases.
- minimize the potential for costs and revenue losses.
- protect human health.
- protect the ability to move animals.
- protect service industries (e.g. feed suppliers).
- protect export markets.
- assist in domestic marketing.

What is farm-level animal biosecurity?

The focus of this guide is farm-level biosecurity, although it is recognized that biosecurity interventions are necessary along the continuum of production systems at all levels – regional, national, and international.

Farm-level biosecurity is a series of management practices designed to minimize the introduction (bioexclusion) and spread (biocontainment) of disease and pests onto a farm, within a farm and beyond the farm. Disease and pests can reduce productivity, affect farm incomes and animal welfare, increase veterinary and labour costs, reduce the value of farmland, close export markets, affect domestic consumption, and reduce prices that producers receive for their animals and products. In addition to adverse effects on the agricultural economy, there can also be negative impacts to the environment and human health.

Who is responsible for farm-level animal biosecurity?

All owners and managers have the ultimate responsibility to protect the health of animals under their care and should consider developing a written farm-level biosecurity plan for their operation. This can be accomplished by working in close cooperation with private veterinarians, extension specialists, and provincial and federal animal health veterinarians available in each region. Quick and simple measures built into your everyday management practices will go a long way toward protecting your farm and your future from costly consequences of disease.

Biosecurity may be considered as a whole farm approach to animal health management. The cooperation of visitors and agri-service personnel is an important part of a plan, but, ultimately, the owner or manager must be willing to do what is necessary to ensure that protocols are followed by family members, employees, and visitors.

Why is farm-level biosecurity planning and implementation important?

In the past, producers and the agricultural community have relied heavily on the use of vaccinations and antimicrobials for managing animal health and production. It is globally accepted that, with the evolution of antimicrobial resistance, emerging and re-merging disease, resistant strains of disease and pests, this approach is no longer effective. Modern farming demands a more holistic approach. Holistic prevention that incorporates biosecurity, medication, and vaccination is the most cost-effective protection for animal disease.

Putting biosecurity practices in place to keep animals healthy has been a long-standing and successful practice on many Canadian farms. There is, however, a move to approach the application of biosecurity practices in a more systematic fashion, across numerous commodities, and from the farm level to the national level.

The complexity of intensively managed farm operations (high populations, staggered production cycles, rearing environments, and demands and logistics) increases the risk potential of introduction and spread of disease. These premises may require stricter biosecurity protocols. Many specialized farm operations, such as integrated poultry and hog farms, have well-developed biosecurity plans to protect the health status of the flock or herd. However, extensive management systems, involving the use of pasture, rangeland, and even community, can benefit from applying the elements of biosecurity described here.

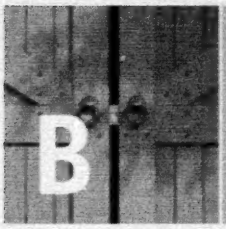
Securing your farm is about knowing the risks to your enterprise, understanding the ways your animals can be exposed to disease, and taking steps to minimize these risks. The steps necessary to put sound biosecurity practices into place often do not require major capital investment, only management and planning changes.

Disease and Animal Production

Disease may result from a number of factors, including, but not limited to, infectious organisms, toxins, trauma or damage to a tissue/organ, as well as metabolic, nutritional, and degenerative conditions. However, a primary cause is infection from pathogens, namely viruses, bacteria, fungi, and parasites. The source or vector for an infectious organism often includes the following:

- live animals (especially sick or recently recovered)
- dead or sick animals
- animal products
- family and staff, and visitors
- clothing
- equipment
- vehicles and transportation
- feed and water
- feces and urine
- birds, wildlife, and other animals
- pests
- air (aerosols or particulates)

The ability of an animal industry sector to withstand an outbreak will be influenced by not only the collective efforts of the sector, but also by individual biosecurity plans and their effective implementation.

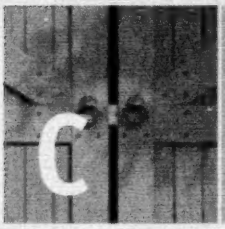


B A Generic Guide

The purpose of this guide is to identify key elements, considerations, and critical points of biosecurity intervention that are applicable to various species (animal) at the farm level. It is designed to assist government, national associations, and producers in developing and implementing biosecurity programs. These preventive guidelines are not all inclusive, but are generally accepted as beneficial management practices for most sector animal species. Adopting these practices does not guarantee protection from all potential diseases, but an effective plan will greatly help in protecting your investment in your animal operation.

This guide is intended to encourage producers to implement the use of sound disease prevention and control practices industry wide. There are many different goals and types of production operations. Sector needs vary geographically, and biosecurity considerations may be regulated federally, provincially, and regionally or municipally. One biosecurity plan will not fit the needs of every farm operation. Biosecurity plans should be developed to meet the specific needs of each operation, with each operation implementing these practices into daily routines that are appropriate for specific diseases of risk. Producers should review their production practices in relation to disease prevention on a frequent basis and ensure their strategies are carried out. An effective biosecurity plan should be flexible and open to new knowledge and technology as it becomes available.

The Canadian Food Inspection Agency (CFIA) has developed a similar approach to protecting Canada's plant resource base. The plant guide has been designed in parallel with the animal resource guide and focuses on biosecurity measures for crops. The National Farm-Level Biosecurity Planning Guide – Proactive Management of Plant Resources can be accessed from the CFIA website.



Developing Your Farm Biosecurity Plan

Developing a biosecurity plan should be a team effort between the owner or producer and veterinarian, with input from other sources. Establishing a practical and sensible farm biosecurity plan involves a rational risk assessment and careful planning to manage the targeted risk(s).

The following steps are typically involved in developing a farm-level biosecurity plan:

- identifying potential concerns or problems;
- evaluating who and what enters and exits a farm;
- determining the risk level for specific diseases of concern;
- evaluating how diseases could enter and spread within and off the farm;
- targeting diseases against which the biosecurity plan will operate;
- identifying preventative biosecurity measures that will manage or minimize the risk factors for a disease(s) entry or spread;
- consulting federal, provincial, regional, and municipal regulations;
- setting limits and standards for your farm;
- establishing uptake of the plan; and
- implementing the biosecurity plan

At a minimum, a biosecurity plan should focus on biosecurity interventions that minimize:

- the risk of entry of pathogens and pests into the animal production area.
- the risk of transmission between production units.
- the release of pathogens and pests from the farm.

Conceptual Farm Layout Incorporating Biosecurity Zones

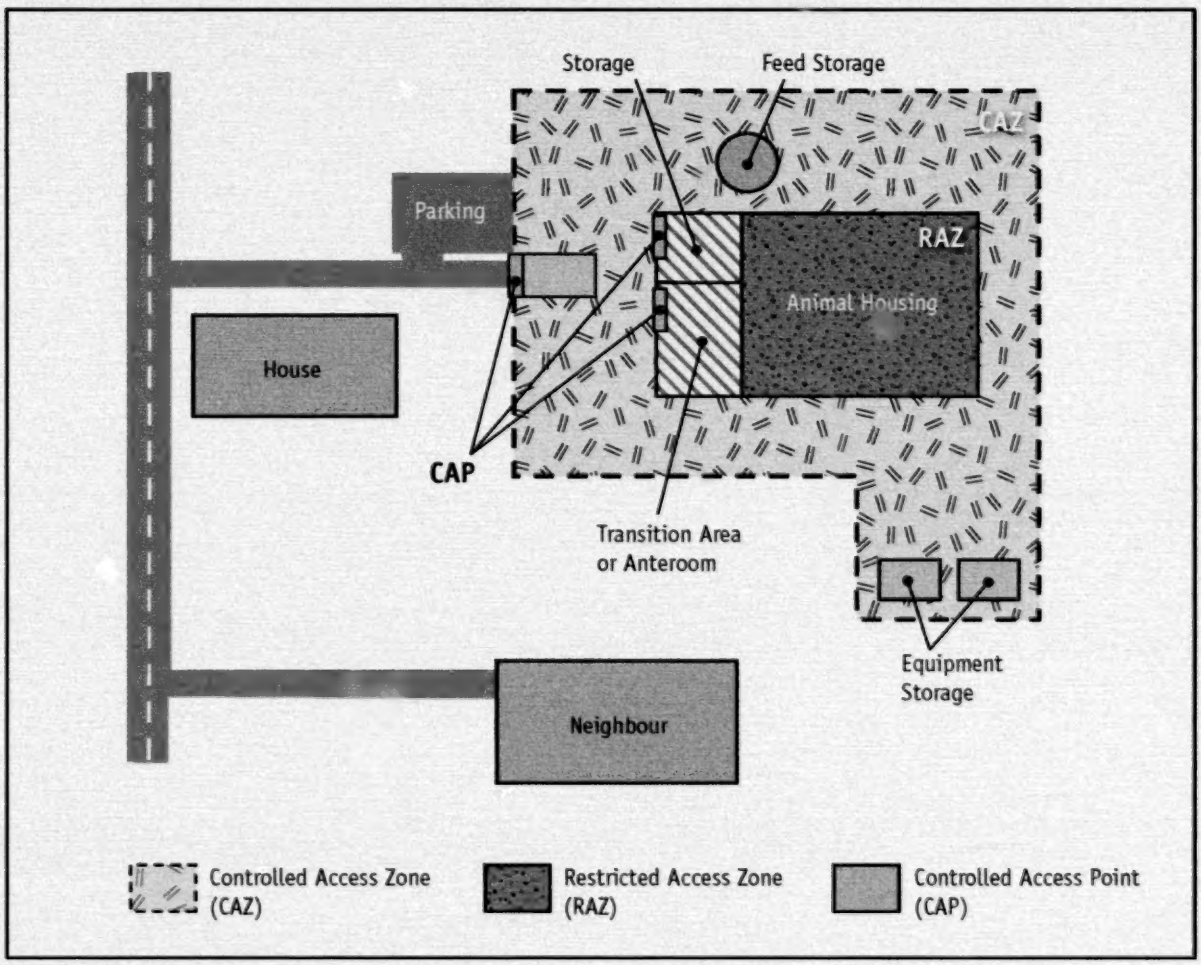
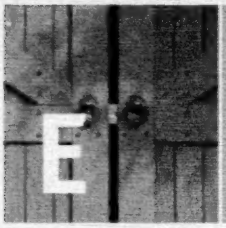


Figure 1:

Houses (residence) and parking areas are located outside the first biosecurity zone called the controlled access zone (CAZ). The CAZ contains operational facilities indirectly involved in animal production (e.g. feed storage) and the restricted access zone (RAZ). The RAZ houses, contains, or confines production animals. Both the CAZ and RAZ are accessed through a controlled access point (CAP).



Definitions

Anteroom: An area or room that immediately precedes restricted access zone (RAZ) and provides a transition from the controlled access zone (CAZ).

Closed: Does not purchase replacement animals of any age: all replacement animals have been bred and raised on-farm (if animals have been taken to a show and returned, the herd/flock can no longer be considered closed).

Controlled Access Point: Visually defined entry point(s) through which traffic, such as workers, equipment, feed trucks, etc., enter the CAZ and/or the RAZ.

Controlled Access Zone (CAZ): The area of land and buildings constituting the production area of the property that is accessible through a securable controlled access point.

Controlled Entry Point: Visually defined entry point(s) through which all traffic, such as workers, visitors, equipment, vehicles, etc., enter the CAZ and/or RAZ

Farm: A tract of land held for the purposes of cultivating or raising certain animals (for food, fibre, or recreation). This may also be referred to as the "property" or "premises." It includes land, buildings, zones, and allocated or designated areas.

Isolated: Physically separated such that new and returning animals or clinically sick animals, as well as their excretions and secretions, cannot contact resident animals.

Livestock (animal): Any animal (including birds, insects, and fish) intentionally reared in an agricultural setting for the purposes of profit or subsistence, whether for food, fur, fibre, dairy, draft, breeding, sport, or hobby purposes, or other product or labour.

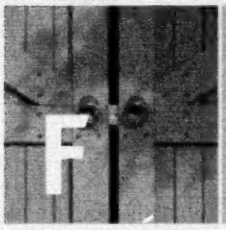
Producer: One who owns or rents land or rears certain animals.

Production area: Includes buildings, range areas, areas used for feed storage and handling, pickup areas, and the area immediately surrounding buildings.

Restricted Access Zone (RAZ): An area inside the CAZ that is used, or intended to be used, to house animals, including semi-confinement and range production and where personnel and equipment access is more restricted than for the CAZ. The RAZ, an inner biosecurity zone, is sometimes referred to as the production area or restricted area (RA).

Transition Area: A designated location for the application of biosecurity procedures to people and equipment before entering a biosecurity zone (CAZ and/or RAZ). The transition area may be a controlled access point, controlled entry point or an Anteroom.

Visitors: Include salesmen, delivery people, veterinarians, livestock haulers, livestock-owning neighbours, livestock specialist, family members, international visitors, utility personnel, contractors, disease surveillance technicians, artificial insemination or embryo technicians, feed industry personnel, supply sales representatives, equipment repair individuals, and anyone who has had contact with animals.



Elements of a Farm-Level Biosecurity Plan

When developing a farm-level biosecurity plan, the following three areas should be considered:

1. Facility location and layout
2. Operational routines
3. Animal health management

The producer is encouraged to design measures that are practical, outcome based, and flexible. For an example of the flexibility in defining biosecurity elements and developing a plan, access the National Avian On-Farm Biosecurity Standard by contacting the CFIA directly or through the CFIA website.

It is important to recognize that it is one of many approaches to defining biosecurity elements for various agri-commodities.

As a biosecurity plan is developed, certain limitations (e.g. geographic, economic) may prevent the implementation of ideal practices. In these circumstances, increased emphasis and rigour in other element(s) may be indicated.

1. Facility Location and Layout

This section addresses the larger physical features of an operation. The intensification of production and limited farmland factors, along with the location of your operation and how it is designed, are becoming increasingly important. Location and layout are easily incorporated into the construction of a new operation. For existing farms, operational routines and animal health management practices are the easiest and least costly to change and provide the greatest immediate impact on a farming operation.

1.1 Geography

The natural environment surrounding your farm is important for understanding the disease risks in your area. During a disease event, the physical features of your operation and local farms are vital information for helping reduce the risk of disease introduction and spread.

Biosecurity considerations:

- Distance to the following:
  - other similar farming units in the area;
  - other livestock sites, including abattoirs, auctions, or sales yards, animal or waste transfer stations, and hatcheries;
  - location of barns with respect to roadways and animal transport routes; and
  - waterways and conservation areas.
- Ensure that the position of ventilation outlets and inlets is not downwind of another operation.

1.2 Layout

An illustration of the layout of your operation can assist in training new employees, directing visitors, planning future production processes and in disease response planning. Understanding the logic of production movements and work patterns can be an important part for the development, implementation, and modification of a biosecurity plan.

Biosecurity considerations:

- Orientation of barns, buildings, and units to minimize disease introduction and transmission.
- Position facilities on the premises to minimize disease introduction and spread.
- Ensure that cleaning and disinfection areas and facilities are appropriately located.
- Designate unloading and loading bays in a location that minimizes disease introduction and spread.
- Place areas for restraint, treatment, and isolation or quarantine of animals in locations that minimize the risk of disease introduction and spread.
- Keep segregated rearing areas for young, sick, and new animals.
- Surround the property with a perimeter fence or boundary.
- Establish a visibly demarcated boundary around the production area.
- Locate, if possible, farm residences outside the production area.
- Make available a layout map of the property, including the production area.

1.3 Traffic Flow

Vehicles and the surfaces on which they travel can be vectors for the introduction, spread, and release of disease-causing agents. Thus, it is important to control and, if necessary, restrict the movement of vehicles on your premises.

Biosecurity considerations:

- Ensure that traffic flow routes are well defined and provide direction to staff and visitors.
- Use appropriate signage to direct visitors to parking areas, farm offices, transition areas, and delivery and drop-off points.

- Provide designated parking areas for vehicles not entering the production area.
- Ensure that the main entrance gate to the premises and production area has appropriate signage and can be secured.

1.4 Landscape

Natural features, including vegetation, waterways, and topography, can benefit a biosecurity plan by providing natural barriers and drainage. These features on your property provide a cheap solution for the implementation of biosecurity measures.

Biosecurity considerations:

- Locate production areas and animal-housing areas on higher ground, and/or use landscaping to assist drainage and reduce standing water in the production area.
- Minimize trees and shrubs near or within the production area.
- Use natural barriers along roadways or neighbouring farm boundaries to enhance separation.
- Manage vegetation within or around the production area.
- Use landscaping to assist drainage and to reduce standing water in the production area.

2. Operational Routine

This section focuses on the day-to-day processes. The arrival and movement of owners, employees, visitors, and services are daily occurrences for a farm operation, and increase the risk of introduction and spread of disease and pests. Risk-reducing measures are easily incorporated into operational routines and often require little finance. The success of operational routines as risk-reducing practices depends on responsibility, cooperation, diligence, flexibility, and planning.

2.1 Biosecurity Zones

Biosecurity zones are areas that involve biosecurity measures to be implemented for access, exit, and movement. Specifically, the Controlled Access Zone (CAZ) and the Restricted Access Zone (RAZ) represent zones of increasing risk. To be effective, these zones are visible and controlled, with their importance understood.

Biosecurity considerations:

- Have a CAZ (outer biosecurity zone) and a RAZ(s) (inner biosecurity zone) for the production area.
- Provide appropriate and visible signage for the CAZ and RAZ.
- Define boundaries of biosecurity zones.
- Control entry and exit points for biosecurity zones.

2.2 Movement of Employees and Visitors

People, clothing, and footwear provide numerous risk factors for a biosecurity plan. However, measures can be developed and implemented to reduce these risks through protocols and the strict control of access to biosecurity zones.

Biosecurity Considerations:

- Communicate and ensure that visitors and service sectors understand and comply with the biosecurity measures.
- Be aware that permission to enter the premises is ultimately the responsibility of the producer.
- Require separate outerwear and footwear (disposable or farm dedicated) for entrance into the production area (CAZ).
- Designate the farm or barn outer clothing for entrance to the animal production area – the RAZ.
- Provide handwashing facilities when entering and exiting a production area or unit.
- Enter and exit into or from the CAZ or RAZ by passing through a controlled entry point (transition area or anteroom) where cleaning, disinfection, handwashing, and outerwear changes occur.
- Require clean to dirty, healthy to sick, and young to old work patterns into, between production units, and out of zones.
- Limit CAZ/RAZ access to accompanied essential visitors (service industry personnel, veterinarians, speciality services, utility personnel, and contractors)
- Have visitors who have had contact with other animals shower before changing into protective outerwear and footwear.
- Use footbaths when provided.
- Remove, contain, and dispose of soiled disposable outerwear and footwear before departure.
- Clean and disinfect dirty boots.
- Wash hands and forearms before leaving the premises.
- All visitors are required to
  - obtain approval before their visit;
  - established biosecurity protocols;
  - fill out a visitor log;
  - be accompanied;
  - limit their access to the production area; and
  - limit their direct access to animals, their products, feed, and water.
- Require that those employees and family members returning from other countries who have had contact with animals and/or animal housing in those countries avoid immediate direct or indirect contact with animals until biosecurity measures have been applied. The biosecurity considerations and the timeframe required are dependent on the animal health status of the country visited and the potential risk of disease transmission.

Note: Any person entering Canada from countries other than the USA are subject to biosecurity precautions (CFIA website for more information)

2.3 Movement of Vehicles and Equipment

Just as people and clothing pose biosecurity risks, vehicles and equipment also pose high levels of risk. This risk is increased if they travel on and off the premises or have direct or indirect contact with animals or animal products.

Biosecurity considerations:

- Ensure that all vehicles entering a farm follow established biosecurity protocols.
- Park employee and family vehicles in a designated area outside the production area and off operational traffic patterns.
- Clean vehicles until they are free of visible organic material on tires, wheel wells, and undercarriage.
- Clean and disinfect vehicles and equipment entering a biosecurity zone in a controlled designated area.
- Ensure that delivery and/or service areas are at a maximum distance from livestock facilities.
- Have designated equipment specific to each farm. Avoid sharing farm equipment between farms.
- Clean and disinfect equipment that is in contact with mortalities, manure, or feed, according to biosecurity protocols or a risk management program,
- Livestock conveyances are required to be cleaned and disinfected prior to arriving at the farm.
- Clean and disinfect, as necessary, vehicles and equipment exiting a biosecurity zone.
- Properly sanitize livestock instruments and equipment (dehorners etc.) before and between uses.
- Limit recreational vehicle use on the premises.
- Maintain a vehicle and equipment arrival log.

2.4 Construction and Maintenance of Facilities and Property

A well-constructed and maintained operation strengthens a biosecurity plan by aiding cleaning and disinfection processes and reducing the risks associated with visitors, services, and pests.

Biosecurity considerations:

- Put in place a routine facility/property maintenance program.
- Conduct routine inspections of equipment and buildings.
- Keep buildings and mechanical equipment in good repair.
- Have signage, fences, and boundaries in good repair.
- Require production areas to be free of water (puddles) and effluent drainage.
- Make sure that buildings are easily cleaned and disinfected.
- Design buildings to prevent the entry of wild birds and animals, and limit the presence of vermin.
- Ensure that gates and building doors can lock.
- Ensure that driveways and walkways are in good repair, and are constructed of all-weather material (concrete or asphalt) that promotes adequate drainage.

2.5 Animal Feed and Bedding

Ingestion of contaminated feed or contact with contaminated bedding can introduce and spread disease quickly. Contamination may occur off-site at purchase or on-site as a result of inappropriate storage.

Biosecurity considerations:

- Source feed from manufacturers or suppliers that operate under a quality assurance program and that have a biosecurity component.
- Contain, seal, and/or enclose feed storage and storage areas.
- Keep feed and bedding storage outside the RAZ.
- Keep feeding systems "closed," wherever possible.
- Ensure that feed-delivery personnel have no contact with livestock.
- Source bedding from reputable suppliers.
- Store bedding in a designated area to prevent contamination.

2.6 Water

Water sources and delivery systems have the potential to expose animals to disease-causing pathogens on a daily basis. Aquatic environments (ponds, lakes, etc.) cannot be controlled and are potential reservoirs for serious disease agents.

Biosecurity considerations:

- Production water meets provincial and municipal standards for potable water.
- Test water regularly for safe animal consumption.
- Use municipal water sources, wherever possible.
- Filter and treat water from wells, streams, ponds, and lakes.
- Reduce or eliminate animal access to streams, rivers, lakes, or ponds.
- Use "closed" water delivery systems, wherever possible.
- Inspect and maintain systems and treatment units.
- Install alarms or other devices to notify producer when water treatment systems are not operational.

2.7 Manure

Daily exposure (direct or indirect) to manure is routine for animals and employees. Manure is an animal product and can easily attract insects and pests, creating the potential for high-risk situations as employees or animals move around the facility. Consider employees and equipment that have entered the RAZ to have had either direct or indirect contact with manure.

Biosecurity considerations:

- Develop a written manure management plan to address collection, storage, handling, and disposal.
- Ensure that manure management adheres to provincial and municipal waste, agriculture, and environmental guidelines.

- Remove animal waste regularly from production areas.
- Store, if possible, animal waste outside of the production area.
- Store animal waste away from property lines and roadways.
- Manage animal waste storage to contain runoff and to limit access to wildlife and pests.
- Require biological composting and anaerobic storage before spreading manure on fields or prior to moving off the property.
- Record movements, including sales, of manure and/or compost from the production area or premises.
- Ensure that neighbouring producers do not spread manure adjacent to your barns, production areas, or water sources.

2.8 Disposal of Mortalities

Mortalities create risk situations in several ways. They may act as a reservoir of pathogens (death due to disease), attract pests, or transfer disease off-site (serviced removal). On-site considerations include movement around the facility, storage and/or containment areas, and compost or final disposal.

Biosecurity considerations:

- Develop and implement a written plan for holding and disposing of dead animals.
- Make sure that mortality disposal adheres to municipal and provincial guidelines.
- Locate disposal and loading (mortality collection) areas outside the production area to prevent contamination of the site.
- Design and locate temporary containment and disposal areas in a way to prevent access by people, domestic animals, wildlife, and pests.
- Manage post mortems and diagnostic tests to prevent further contamination.
- Appropriately dispose of contaminated bedding, animal products, manure, or feed.
- Situate dead animal pickup in a location that prevents further contamination.

2.9 Pets, Pests, Weeds, Feral Animals, and Wildlife

Animals, insects, and birds create a unique set of risk situations. The farming of animals creates favourable environments for pests, including shelter, food, and water. Pests can be direct vectors for disease-causing agents, and they can spread disease through movement and create a food chain that attracts more, and possibly, higher-risk pests.

Biosecurity considerations:

- Develop and implement an integrated pest management program.
- Cut grass and vegetation around the production area to discourage pests and wildlife.
- Monitor rubbish dumps and debris piles for vermin or wild animals.
- Inspect buildings for pest activity, and maintain against access points.
- Manage feed spills and food sources.
- Secure entry points to animal housing, pens, and barns to prevent pest and wildlife access.

- Ensure that measures are in place to prevent birds from nesting in barns.
- Restrict companion animals from the production area.
- Include working dogs in a biosecurity plan.
- Manage and reduce risks posed from employees who own farmed animals, pets, and exotics.

2.10 Production Cleaning and Disinfection

Cleaning and disinfection are key pillars of a strong biosecurity plan. These processes work in conjunction with zoning and other measures. Cleaning and disinfection reduces pathogen load on people, equipment, and vehicles, which mitigates the risk of movement between and within production areas.

Biosecurity considerations:

- Develop and implement a production facility cleaning and disinfection program.
- Plan acceptable downtimes between production cycles.
- Clean production areas and equipment after each production cycle.
- Remove all organic waste material regularly, during and after each production cycle.
- Include a pre-cleansing and sanitizing step to remove remaining organic material before disinfecting.
- Clean and disinfect the following:
  - removable equipment separately,
  - isolation or quarantine areas after use,
  - production areas following a disease outbreak,
  - loading and unloading bays after use, and
  - shared and borrowed farm equipment before or after use.
- Drain, disinfect, and refill water systems.
- Routinely clean animal feeders and feeding areas.
- Select disinfectants, based on target organisms and needs.

2.11 Planning and Training

Knowledge provides the ability to effectively control operations on a farm. It also allows for future planning as situations or production processes change. Developing and implementing a training program provides employees with a sense of involvement and pride, and helps to avoid complacency.

Biosecurity considerations:

- Assess disease risks, identifying and implementing biosecurity interventions, in consultation with your veterinarian, extension worker, and employees.
- Define the biosecurity goals and standards that you desire to maintain.
- Develop and implement a written workable biosecurity plan.
- Ensure that each production facility has an available copy of the biosecurity plan
- Monitor, review, and change as situations change and new knowledge becomes available.

- Develop standard operating procedures (SOPs) for routine biosecurity practices.
- Provide employees and family members theoretical and practical training based on your plan.
- Maintain periodic training and discussion sessions with staff and family members.
- Share your biosecurity plan with neighbours, visitors, industry associations, and services.
- Work and communicate with a veterinarian on a regular basis.
- Keep well informed on animal health developments (locally, regionally, nationally, and internationally).

3. Animal Health Management

3.1 Good Management Practices

Developing, implementing, and maintaining good management practices allows a biosecurity plan to operate effectively and provides animals with an environment that is conducive to good health and maximum production.

Biosecurity considerations:

- Have a simple and practical written animal health and welfare plan in place.
- Review your plan as necessary.
- Comply with established animal welfare codes of practices and standards.
- Implement modern management systems and innovations (segregated rearing systems and all-in/all-out management practices).
- Ensure that staff and family are knowledgeable and experienced in disease prevention, identification, and control procedures.
- Manage group size, age distribution, and animal flow.
- Maintain a closed herd or flock.
- Keep herd or flock separate from those of neighbours.
- Limit, if possible, the use of equipment to one group of animals.
- Maintain performance and health data.
- Retain records of all animal and animal product (semen/embryos) movements and transactions for traceability purposes.
- Plan animal introductions, and movement within and removal from the premises.
- Establish a sound nutritional program.
- Reduce environmental stressors.
- Maintain and communicate biosecurity standards to visitors and service sectors.

3.2 Observation and Evaluation

Early detection of a disease concern is vital to minimizing its impact and to facilitating its containment to a premises or individual production units.

Interventions:

- Observe and inspect livestock daily.
- Consult a veterinarian as needed.
- Establish trigger points (illness, declining production levels, higher morbidity and mortality levels) as a baseline for contacting your veterinarian.
- Maintain and keep animal health records up to date.
- Conduct routine testing and screening of resident animals for disease.
- Contact your private veterinarian or government veterinarian immediately, if unusual sickness or unexplained deaths occur.

3.3 New and Returning Animals

Introducing new animals, or animals returning from off-site activity, has the potential to introduce disease-causing agents into a production system.

Biosecurity considerations:

- Develop protocols with your veterinarian for introducing new or returning animals.
- Obtain animals from reputable and biosecurity-concerned suppliers.
- Purchase animals with equivalent or higher health status than your own.
- Ensure that the health status of new animals is known.
- Conduct appropriate screening tests, as recommended by your veterinarian or extension specialist at the time of purchase.
- Obtain a vendor's declaration regarding the health status and treatment and vaccination history of new purchases.
- Transport animals with a clean and disinfected truck or trailer.
- Designate an isolation or quarantine facility within the production area – separate from other animals (no nose-to-nose contact, sharing of water, feed supplies, or equipment).
- Isolate or quarantine new animals for an appropriate period of time, and observe daily.
- Stage or minimize the frequency of new animal arrival.
- Isolate or quarantine animals returning from fairs, shows and exhibitions, and community pastures.
- Clean and disinfect the equipment used with these animals.
- Ensure that production area personnel who have had contact with other animals have no contact with quarantined or isolated animals.

3.4 Sick Animals

Sick animals can easily transmit disease through direct or indirect contact. Initially, the disease may be low grade; however, animals in a compromised or weakened condition are more susceptible to highly contagious and virulent disease agents.

Biosecurity considerations:

- Establish protocols for handling sick animals.
- Remove and isolate from the remainder of the herd or flock those animals that are showing signs of disease.
- Investigate sick animals for cause of disease.
- Contact a veterinarian for appropriate tests and treatment(s).
- Consider a test and cull approach, depending on the disease.
- Contact a veterinarian or government official immediately if unusual sickness or unexplained deaths occur.
- Investigate and examine all abortions and unexplained deaths.
- Use humane euthanasia procedures for sick, injured, and/or debilitated animals.
- Isolate from the isolated or quarantined animals all waste from the non-quarantined animals, as well as any feed or water source.

3.5 Vaccination and Medication

Implementing proactive measures is an excellent way to help reduce the risk of disease becoming established on a farm. The appropriate use of medication can improve the efficacy of treatment and help reduce the risk of future concerns.

Biosecurity considerations:

- Develop a written animal health and welfare management plan (vaccination, worming, antibiotic and chemical therapy, parasite and fly control).
- Treat new animals with appropriate parasite treatments and vaccinations before introduction into the resident stock.
- Minimize the risk of drug residues and antibiotic resistant bacteria.
- Use all animal health products accordingly, following label and prescription directions.
- Maintain a permanent record of all individual animal or group treatments.
- Use new sterile or disposable needles and syringes.
- Retain copies of any written veterinary prescriptions for at least two years.

3.6 Disease Response Plans

The ability to react quickly and effectively to a disease situation is vital to minimizing the impact on an operation and helps prevent disease spread.

Biosecurity considerations:

- Develop and implement a written disease response plan with your veterinarian, designed to control the movement of people, animals, vehicles, and equipment during outbreak events.
- Include in the disease response plan the production trigger levels and detailed contact information of response personnel.
- Ensure that workers are knowledgeable and experienced in observing animals and production parameters for signs of disease.
- Ensure that family members and employees are familiar with disease-response procedures.

Farm-Level Biosecurity Checklist for Animals

Section 1: Facility Location and Layout

1.1 Geography

	Yes	No	N/A	Comments
A layout map of the property, including boundaries, roadways, waterways, buildings and production areas, is available.				

1.2 Layout

Cleaning and disinfection areas are appropriately located.				
Isolation or quarantine facilities are available.				
A perimeter fence or boundary surrounds the property.				
A visible demarcated boundary surrounds the production area.				

1.3 Traffic flow

Routes are defined and provide direction.				
Appropriate signage exists.				
Parking areas exist.				
Main entrance to the production area and premises can be secured.				

1.4 Landscapes

Vegetation is managed.				
Natural drainage is effective.				

Section 2: Operational Routine

2.1 Biosecurity zones

	Yes	No	N/A	Comments
Controlled and restricted access zones are established.				
Entry and exit points are controlled.				
Appropriate signage exists.				

2.2 Movement of employees and visitors

Access to biosecurity zones is limited and controlled through controlled access points.				
Disposable dedicated outerwear and footwear are provided.				
Cleaning and disinfection occurs at production area entries and exits.				
Handwashing facilities are available.				
Biosecure workflow patterns are followed.				
Visitors are controlled and have limited access to production areas.				
Foreign visitors, employees, or family who have had contact with animals or farms outside Canada or the U.S. follow established biosecurity protocols.				
Visitor log is maintained.				

2.3 Vehicles and equipment movements

Parking areas outside the production zone are available.				
Vehicles and equipment entering or exiting a biosecure zone are cleaned and disinfected.				
Only essential vehicles and equipment enter the production zones.				
There is no vehicle and equipment sharing between farms.				
Vehicles and equipment having direct contact with animals or their products are dedicated or cleaned and disinfected.				
Vehicle movement log is maintained.				

2.4 Construction and maintenance of facilities and property	Yes	No	N/A	Comments
There is a written maintenance plan.				
Construction materials are easily cleaned and disinfected.				
Equipment, buildings, boundaries, and signage are in good repair.				
Standing water is removed or minimized.				
Entry of pests and wildlife is deterred.				

2.5 Animal feed and bedding is				
Sourced from a quality-assured supplier.				
Securely stored.				

2.6 Water				
Meets potable standards for animal consumption.				
Tested regularly.				
Water from natural or open sources is filtered and treated.				

2.7 Manure				
There is a written management plan.				
Manure management adheres to regulatory guidelines.				
Removal, movement, and storage follow risk-reduction measures.				
The facility uses effective composting techniques.				

2.8 Disposal of mortalities				
There is a written management plan.				
Mortality management adheres to regulatory guidelines.				
Removal, movement, and storage follow risk-reduction measures.				
Mortalities are tested when appropriate.				

	Yes	No	N/A	Comments
2.9 Pets, pests, weeds, feral animals, and wildlife				
There is an integrated pest management program.				
Attractive environments are eliminated or reduced.				
Activity is monitored.				
Access to production areas is deterred.				
Companion animals are restricted or controlled by the management plan.				

2.10 Production cleaning and disinfection				
There is a written cleaning and disinfection program.				
Downtimes between production cycles are maximized.				
Cleaning and disinfection measures occur between production cycles, after isolation or quarantine, and disease occurrences.				

2.11 Plan and train				
A written practical biosecurity plan has been developed in consultation with a veterinarian.				
The plan has been shared with family, employees, services, and neighbours.				
SOPs have been written for routine biosecurity protocols.				
Biosecurity training takes place.				

Section 3: Animal Health Management

3.1 Good management practices				
A written biosecurity plan is in place.				
Staff are trained, knowledgeable, and experienced in signs of disease.				
Production health and movement records are maintained.				
The facility uses modern management practices.				

	Yes	No	N/A	Comments
3.2 Observation and evaluation				
Livestock are observed and inspected daily.				
Trigger points for response are established.				
Health records are maintained.				
3.3 New and returning animals				
Protocols are available for new and returning animals.				
New animals are sourced from reputable suppliers and are of equivalent or higher health status than resident animals.				
Screening tests and declarations are performed.				
New or returning animals are isolated for an appropriate time and are observed.				
3.4 Sick animals				
There are established protocols.				
Sick animals and their products are isolated or quarantined.				
Cause of disease is investigated by a veterinarian.				
3.5 Vaccination and medication				
There is a written animal health and welfare management plan.				
Records are maintained.				
Vaccines and medications are stored appropriately.				
Treatment is supervised by a veterinarian.				
3.6 Disease response plan				
There is a written response plan.				
There are established trigger levels for response.				
The plan is available and understood by family and employees.				

SOP = standard operating procedure

	Yes	No	N/A	Comments
Add more as required				